

Remarks

The Applicants would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter in this application.

Claims 1-9 and 12 are cancelled without prejudice.

Claims 10 and 11 are currently amended.

Claims 1, 3, and 8-12 stand rejected as obvious in view of Spencer et al. (US Patent 4,609,801, hereinafter "Spencer"). With regards to claims 1, 3, 8-9, and 12, which have been cancelled, the rejection is rendered moot. With regards to claims 10-11, for at least the following reasons, the Examiner's rejection is respectfully traversed.

Amended claim 10 has been rewritten into independent form, including all of the limitations of claims 1 and 4 (i.e., 1+4+10). Thus, as admitted by the Examiner, Spencer does not describe, teach or suggest each and every limitation as required in amended claim 10. Specifically, Spencer does not disclose, teach or suggest "wherein insulating films are formed on a surface of the front plate on a side opposed to a side of being connected with the inner main body and an outer side surface of the inner main body, and wherein an inner peripheral portion of the locking hole is not formed with the insulating film and constitute a conducted face, and a surface of the main body portion of the locking projection is a metal face having conductivity, and therefore a front plate and a face plate of the inner box main body are electrically connected," as is recited in amended claim 10.

Specifically, in the instant invention as shown in Figure 4, projection 35 includes a face surface having a conductive, metal face because no insulating film is formed on

the surface of the front plate that is connected with the inner main body (i.e., the surface on the side of the projection 35). Similarly, no insulating film is formed on the interior surface of the locking hole. Thus, the face surface of the projection 35 is in direct, electrical contact with an inner peripheral portion of the locking hole 31, so as to provide electrical conductivity therebetween. Electrical conduction between the front plate and the inner main body is very important to inhibit or prevent microwave leakage.

Neither Spencer nor the other cited prior art reference Enami (U.S. 4,563,559) teaches or suggests that a projection includes a face surface having a conductive, metal face. While Enami does discuss a paint layer as shown in Fig. 45, the paint layer 1605 is positioned on all of the front surface of a front panel 605, and a paint layer 1609 is positioned on an inner surface of the top panel 609. Enami's painted layer 1605 on the front surface continues all the way to the connected side with the top panel 609. Therefore, the construction of Enami is for use with two fold-to-bend portions, and not with a projection being received in a corresponding hole.

Indeed, it is respectfully submitted that Enami provides a clear *teaching away* that would *render the prior art reference being modified unsatisfactory for its intended purpose and change the principle of operation of the prior art reference.* See MPEP 2141.02, 2143.01, and 2145. Specifically, as detailed above, Enami teaches away from the combination of paint layers and a locking projection / hole system because such a combined system can produce microwave leakage. Specifically, Enami states that "in the case where the area of electrically conductive portions is less than 1/3 of the total area of contact between the front and top panels 605 and 609, there is a problem that the paint layers 1605 and 1609 becomes heated whereby the paint is burned, causing leakage of electric waves." Enami further states, "Thus, it has been found that leakage

of electric waves due to the burning of paint layers when painted steel sheets are used can be prevented by making the area of contact of electrically conductive portions in the joint greater than 1/2 of the total area of contact." See Col. 14, lines 15-30 of Enami.

As a result, Enami teaches that where painted surfaces are used, a large electrical conduction area must be used to prevent paint burning, and consequently, electrical conduction provided by a locking projection and hole cannot provide a sufficient conduction area. Instead, two fold-to-bend portions must be used to provide the sufficient conduction area. Therefore, Enami provides a clear *teaching away* from using a locking projection / hole system where two fold-to-bend portions are utilized. Thus, no modification of Spencer and Enami with painted surfaces, projections, and holes can provide the requirements of claim 10 without *rendering Spencer and Enami unsatisfactory for their intended purposes and changing their principles of operation*.

Accordingly, the subject application is not rendered obvious in view of Spencer or Enami by way of any proposed modifications thereof.

Similarly, neither reference teaches or suggests that insulating films are formed on a surface of the front plate on a side opposed to a side of being connected with an inner main body and an outer side surface of the inner main body. As discussed above, Enami's painted layer 1605 on the front surface continues all the way to the connected side with the top panel 609. To the contrary, in the instant application, insulating films are formed on a surface of the front plate on a side opposed to a side being connected with the inner main body and an outer side surface of the inner main body. In other words, in amended claim 10, the insulating film on the front plate and the insulating film on the inner main body are not contacted with each other. Consequently, an asserted combination of Spencer and Enami will not render amended claim 10 obvious.

Further, as admitted by the Examiner, Spencer does not disclose, teach or suggest that a second fold-to-bend portion has a locking hole and a flange portion has a locking projection penetrate through the locking hole, as recited in amended claim 10.

Instead, Spencer merely discloses that a flange portion 96c of an inner member 88 has a plurality of equally spaced holes 104c, and a plurality of dimples 106c are pressed into the portion 102 of a front panel flange 96 which overlaps and captures the top panel flange 96c, directly over the spaced holes 104c (column 6, lines 3-8 and Fig. 11 of Spencer). Moreover, according to the structure shown in Figure 9 of Spencer, a through-hole is formed in the end of the member 54 (corresponding to the flange) and the projection is formed on the member 98b (corresponding to the second-fold-to-bend portion). Thus, during assembly, the relative position between the projection and the hole cannot be confirmed from the outside by a user. Indeed, the hole is completely hidden from view, and the projection must be blindly assembled within the hole. Therefore, accurate positioning cannot be maintained, so that coupling failure may occur.

The inner box used in a microwave oven is subjected to cyclic heating and cooling stresses over a long period of time. Thus, reliable coupling is required. For example, if one coupling failure occurs at a position in the inner box, such uncoupling may increase into multiple coupling failures over time. As a result, undesirable microwave leakage can be caused, leading to a device that is unfit for its intended purpose.

Accordingly, by the instant application, the structure of amended claim 10 provides a clear advantage over that of Spencer. More specifically, the second fold-to-bend portion 27 has a hole 31 and the flange portion 33 has a projection 35. The second fold-to-bend portion 27 is inserted into the clearance between the first fold-to-bend portion 25 and the second fold-to-bend portion 27 for coupling the projection 35 into the hole 31. Thus, during manufacturing and assembly, as best seen in Figures 3-4, it is easy to confirm the position of the locking projection 35 relative to the locking hole 31 prior to bending the second fold-to-bend portion 27 because the locking projection 35 is visible to a user through the locking hole 31. Thus, coupling failure due to displacement of the locking hole 31 and the locking projection 35 is prevented, and a stronger and more reliable coupling is expected.

Moreover, the instant invention is not obvious in view of Spencer as a mere reversal of parts. The Examiner cites the case *In re Einstein* in support of his argument. However, the holding of that case is also tempered, with regards to reversal of parts, because it also states: "There must be some new device or some new and useful purpose accomplished." *In re Einstein*, 18 CCPA 885, 888. In other words, while a mere reveal of parts alone may not be patentable, if a modification rises to the level of a new device or accomplishes some new and useful purpose, said modification is not obvious in view of the prior art.

Specifically, in the instant case, the second fold-to-bend portion 27 has a hole 31, and the flange portion 33 with the projection 35 is inserted into the clearance between the first fold-to-bend portion 25 and the second fold-to-bend portion 27. Thus, because the locking projection 35 is visible to a user through the locking hole 31 during manufacturing and assembly, it is easy to confirm the position of the locking projection

35 relative to the locking hole 31 prior to bending the second fold-to-bend portion 27.

Therefore, the configuration of the instant invention not only provides a new device, but it also provides a new and useful purpose, namely, permitting a user to confirm the position of the locking projection 35 relative to the locking hole 31 during assembly to ensure a durable connection. Thus, it would not have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the hole in the second fold-to-bend portion, and the locking projection on the flange portion. For example, there is absolutely nothing in Spencer, nor in any of the other cited prior art, demonstrating that one of skill in the art would modify the described crimping connection. Further, the instant application provides a solution to this long felt but unsatisfied need. Indeed, it was the instant applicants who first recognized the advantage of making the modification.

Therefore, Spencer's structures are different from the claimed structure. Moreover, Spencer does not clearly disclose or render foreseeable all of the limitations of claim 10, as is required by law to support a rejection under U.S.C. 103(a). Notably, Spencer does not disclose, teach, or suggest "a second fold-to-bend portion has a locking hole and a flange portion has a locking projection penetrate through the locking hole" or "wherein insulating films are formed on a surface of the front plate on a side opposed to a side of being connected with the inner main body and an outer side surface of the inner main body, and wherein an inner peripheral portion of the locking hole is not formed with the insulating film and constitute a conducted face, and a surface of the main body portion of the locking projection is a metal face having conductivity, and therefore a front plate and a face plate of the inner box main body are electrically connected." Accordingly, it is respectfully submitted that amended claim 10

is now in condition for allowance. Withdrawal of the rejection is respectfully requested.

Amended claim 11 has also been rewritten into independent form, including all of the limitations of claims 1, 3 and 5 (i.e., 1+3+5+11). For at least the reasons noted above with regards to amended claim 10, Spencer does not describe, teach or suggest each and every limitation as required in amended claim 11. Accordingly, it is respectfully submitted that amended claim 11 is now in condition for allowance. Withdrawal of the rejection is respectfully requested.

Finally, claims 4-5 are rejected under 35 U.S.C. 103(a) over Spencer in view of Enami (U.S. Patent No. 4,563,559). Because claims 4-5 have been cancelled, the rejection is rendered moot.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

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If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NGB-36548.

Respectfully submitted,

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